

TITLE 13. CALIFORNIA AIR RESOURCES BOARD

NOTICE OF PUBLIC HEARING TO CONSIDER ADOPTION OF EMISSION STANDARDS AND TEST PROCEDURES FOR NEW 2001 AND LATER OFF-ROAD LARGE SPARK-IGNITION ENGINES

The Air Resources Board (the "Board" or "ARB") will conduct a public hearing at the time and place noted below to consider the adoption of emission standards and test procedures for new 2001 and later off-road large spark-ignition engines.

DATE: October 22, 1998
TIME: 9:30 a.m.
PLACE: Board Hearing Room, Lower Level
2020 L Street
Sacramento, California 95814

This item will be considered at a two-day meeting of the Board, which will commence at 9:30 a.m., October 22, 1998, and will continue at 8:30 a.m., October 23, 1998. This item may not be considered until October 23, 1998. Please consult the agenda for the meeting, which will be available at least 10 days before October 22, 1998, to determine the day on which this item will be considered.

This facility is accessible to persons with disabilities. If accommodation is needed, please contact the Clerk of the Board at (916) 322-5594 or TDD (916) 324-9531 or (800) 700-8326 for TDD calls from outside the Sacramento area, by October 8, 1998.

INFORMATIVE DIGEST OF PROPOSED ACTION/PLAIN ENGLISH POLICY STATEMENT OVERVIEW

Sections Affected: Adoption of the following sections of Title 13, California Code of Regulations, and the documents incorporated by reference therein: Chapter 9, Off-road Vehicles and Engines Pollution Control Devices; Article 4.5, Large Spark-Ignition Engines; Sections 2430, et seq., and the incorporated "California Exhaust Emission Standards and Test Procedures for New 2001 and Later Off-Road Large Spark-Ignition Engines." Amendment of the following sections of Title 13, California Code of Regulations, and the documents incorporated by reference therein: Chapter 9, Off-road Vehicles and Engines Pollution Control Devices; Article 3, Off-Highway Recreational Vehicles and Engines; Sections 2411-2414, and the incorporated "California Exhaust Emission Standards and Test Procedures for 1995 and Later Off-Highway Recreational Vehicles and Engines."

The California Clean Air Act as codified in the Health and Safety Code sections 43013 and 43018 grants the ARB authority to regulate off-road mobile source categories. Included are marine vessels, locomotives, utility engines, off-road motorcycles, and off-highway vehicles. Measure M11 of the California 1994 State Implementation Plan for Ozone directed staff to develop emission control regulations specifically for spark-ignition engines above 25 horsepower. In crafting the proposal, the ARB staff met with engine manufacturers, trade associations, emission control manufacturers and developers, fuel system suppliers, and other interested parties in numerous individual meetings and calls. The staff also held a public workshop on May 19, 1998.

STAFF PROPOSAL

The proposal, which would be implemented with engines produced in the 2001 model year, would apply to off-road spark-ignition engines 25 horsepower or above, with some exceptions. The proposed regulations would exclude construction and farm equipment engines below 175 horsepower, consistent with the 1990 federal Clean Air Act Amendments' preemption of state authority, and the United States Environmental Protection Agency's (U.S. EPA) subsequent implementation of that provision. It also excludes marine propulsion engines, engines used in devices that operate on rails or tracks, recreational vehicles, snowmobiles, and gas turbines. The proposal would establish exhaust emission standards for hydrocarbons (HC) and oxides of nitrogen (NO_x) combined, and for carbon monoxide (CO). It would also establish emission test procedures, test cycles, and fuel specifications, which are representative of actual use in California, and emissions compliance requirements. All of the testing and fuel specifications have been developed with industry input.

The staff proposes a certification process most similar to the streamlined small off-road engine certification process recently developed by ARB, U.S. EPA, and industry. That process allows ARB to receive the most useful and pertinent information on a timely basis, while providing electronic submission and minimizing the administrative burden on manufacturers.

The proposal consists of two tiers of emission standards, shown below in table 1. Tier 1 would be implemented through a phase-in beginning in 2001; manufacturers would be required to show that 40 percent of their California large spark-ignition engines complying with the emission standards in 2001, 60 percent in 2002, and 80 percent in 2003. For this first tier, manufacturers would be responsible only for meeting the proposed emission standards when the engine is new (i.e., they would not be liable for meeting the standards in-use). The phase-in will provide industry with flexibility to develop controlled engines over a period of years instead of developing all their engines by 2001. The second tier (Tier 2), implemented in 2004, would require 100 percent of manufacturers' engines to comply with the proposed standards for the engines' useful lives. Manufacturers would be required to demonstrate that their engines comply with the emission standards in-use. The implementation of Tier 2 is expected to coincide with the implementation of a harmonized federal (nationwide) program.

The proposed emissions standards would differ based on engine displacement. Specifically, a division between the smaller and larger engines at 1.0 liter is proposed. Many of the engines

below one liter in displacement share many characteristics with the larger of the small off-road engines below 25 horsepower, as opposed to the engines greater than one liter, which tend to be de-featured versions of current or past automobile engines. In general, staff anticipates that manufacturers of large spark-ignition engines will use three-way catalysts with closed-loop controls to meet the proposed emission standards. Manufacturers will likely continue to use systems developed for Tier 1 to comply with the Tier 2 requirements, but with greater attention paid to maintaining emission control over the useful life of the engine.

Table 1
Proposed Emission Standards

Year	Engine Size	Standards (g/bhp-hr)		Useful Life
		NMHC+NO _x	CO	
Tier 1 2001-2003 (Phase-in)	< 1.0 liter	5.0	37	N/A
	1.0 liter and greater	3.0	37	N/A
Tier 2 2004 and later	< 1.0 liter	5.0	37	3000 hours or 5 years
	1.0 liter and greater	3.0	37	5000 hours or 7 years

In addition to the emission standards, the proposal would require all engines produced in model year 2001 or later to have closed crankcases. This requirement is already met by a majority of the engines in the category.

For 2001 through 2003 model year engines, manufacturers would be required to provide a two year emissions defects warranty to the ultimate purchaser. Beginning with the 2004 model year, emissions defects warranty would be extended depending on engine size. The warranty would ensure that emissions-related parts are free of defects.

Compliance of production engines would be determined through the Cumulative Sum procedure used by both ARB and the U.S. EPA for small off-road engines. The Cumulative Sum procedure replicates the statistical foundation of the federal Selective Enforcement Audit program, while providing greater opportunity for a quick decision, thus minimizing the manufacturer's possible testing burden. In addition to the Cumulative Sum production line testing described above, new engine compliance testing similar to other on- and off-road programs will be included. Since Tier 1 does not require manufacturers to meet an emissions durability standard, there will not be an in-use component for Tier 1. However, Tier 2 would require manufacturers to demonstrate that their emission-controlled engine complies with the emission standards for its

useful life period. The useful life is dependent on the engine size, as shown in Table 1. To ensure that the durability requirements are followed, an in-use testing program is also proposed. For each model year, the ARB would require manufacturers to test up to 25 percent of the total number of engine families in-use. For manufacturers producing fewer than four engine families in a model year, a minimum of one engine family must be tested each year. Small volume manufacturers, those that produce fewer than 2000 large spark-ignition engines annually nationwide, and low volume engine families (less than 500 engines) would have a reduced testing burden.

If a selected in-use engine fails to meet the applicable emission standards, the manufacturer must determine the reason for noncompliance and report all such reasons within fifteen days of the end of testing. The Executive Officer will consider failure rates, average emission levels and the existence of any defects, among other factors, in determining whether to pursue remedial action. While the Executive Officer would be able to order a recall, the manufacturer, instead, may perform a voluntary emissions recall. Once ARB determines that a substantial number of engines fail to conform with the requirements, the manufacturer would not have the option of a voluntary recall.

Manufacturers have the option of participating in an in-use emission credit program. Emission credits would be generated when the emission level of in-use engines tested by the manufacturers are below the standards. More engines per engine family tested generates a greater percentage of usable emission credits. Manufacturers may use in-use emission credits to remedy in-use testing noncompliance.

The staff also proposes to provide relief for small-volume manufacturers that produce less than 2000 engines annually nationwide. Specifically, small-volume manufacturers would not need to meet the standards until 2004, a three year delay. The durability demonstration and in-use testing program would also include a means to reduce the testing burden on small-volume manufacturers.

RELATED FEDERAL ACTIONS

The U.S. EPA is anticipated to promulgate regulations for large spark-ignition engines to satisfy the requirements of SIP measure M12. Those regulations are expected to be harmonized with the staff's proposal. The cost of the separate California program is justified by the benefit to human health, public welfare, and the environment. In addition, the differences from the anticipated federal program are authorized by Health and Safety Code sections 43013 and 43018.

BENEFITS OF THE PROPOSAL

The staff analysis of the proposal indicates that the proposal will reduce 55 tons per day of HC+NO_x at a cost of less than \$0.25 per pound, well below the ARB's cost-effectiveness threshold of \$11.00 per pound.

AVAILABILITY OF DOCUMENTS AND CONTACT PERSON

The Board staff has prepared the staff report for the proposed action that includes a summary of the environmental impacts of the proposal. The staff report and the full text of the proposed regulatory language may be obtained from the Board's Public Information Office, 2020 L Street, Sacramento, California 95814, (916) 322-2990 at least 45 days before the scheduled hearing. The ARB staff has compiled a record which includes all information upon which the proposal is based. The ARB has determined that it is not feasible to draft the regulation in plain English due to the technical nature of the regulation; however, a plain English summary of the regulation is available from the agency contact person named in this notice, and/or is also contained in the staff report for this regulatory action.

To obtain this document in an alternative format, please contact the Air Resources Board ADA Coordinator at (916) 322-4505, TDD (916) 324-9531, or (800) 700-8326 for TDD calls from outside the Sacramento area.

Further inquiries regarding this matter should be directed to Ms. Jackie Lourenco, Manager, Off-Road Controls Section at (626) 575-6676 of the Air Resources Board, Mobile Source Control Division, 9528 Telstar Avenue, El Monte, California 91731.

COSTS TO PUBLIC AGENCIES AND TO BUSINESSES AND PERSONS AFFECTED

The determination of the Board's Executive Officer concerning the costs or savings necessarily incurred in reasonable compliance with the proposed regulations are presented below.

The Executive Officer has determined that the proposed regulatory action will not create costs or savings, as defined in Government Code section 11346.5(a)(6), to any state agency or in federal funding to the state, costs or mandate to any local agency or school district whether or not reimbursable by the state pursuant to Part 7 (commencing with section 17500), Division 4, Title 2 of the Government Code, or other nondiscretionary savings to local agencies.

In developing this regulatory proposal, the ARB staff evaluated the potential economic impacts on private persons and businesses. The Executive Officer has determined, pursuant to Government Code section 11346.5(a)(3)(B), that the regulation will affect small business. The Executive Officer has also determined that adoption of the proposed regulatory action will not have a significant adverse economic impact on businesses, including the ability of California businesses to compete with businesses in other states.

The Executive Officer has determined that there will be no, or an insignificant, potential cost impact, as defined in Government Code section 11346.5(a)(9), on private persons or businesses directly affected resulting from the proposed action.

Finally, the Executive Officer has determined that the proposed regulatory action will not affect the creation or elimination of jobs within the State of California, the creation of new businesses or elimination of existing businesses within California, or the expansion of businesses currently doing business within California. Assessment of the economic impacts of the proposed regulatory action can be found in the staff report.

Before taking final action on the proposed regulatory action, the Board must determine that no alternative considered by the agency would be more effective in carrying out the purpose for which the action is proposed or would be as effective and less burdensome to affected private persons than the proposed action.

SUBMISSION OF COMMENTS

A written report and oral statements will be presented by staff at the meeting. Interested members of the public may also present comments orally or in writing. To be considered by the Board, written comments must be filed with the Clerk of the Board, Air Resources Board, P.O. Box 2815, Sacramento, California 95812, no later than 12:00 noon October 21, 1998, or received by the Clerk of the Board at the hearing.

It is requested but not required that twenty copies of any written statement be submitted and that all written statements be filed at least 10 days prior to the hearing. The Board encourages members of the public to bring to the attention of staff in advance of the hearing any suggestions for modifications of the proposed regulatory action.

STATUTORY AUTHORITY AND HEARING PROCEDURES

This regulatory action is proposed under the authority granted in Health and Safety Code sections 39600, 39601, 43103, 43108, 43101, 43102, 43104, and 43105. This action is proposed to implement, interpret, and make specific Health and Safety Code sections 43013, 43017, 43018, 43101, 43102, 43104, 43105, 43150-43154, 43205.5, and 43210-43212.

The public hearing will be conducted in accordance with the California Administrative Procedure Act, Title 2, Division 3, Part 1, Chapter 3.5 (commencing with section 11340) of the Government Code.

Following the public hearing, the Board may adopt the regulatory language as originally proposed, or with nonsubstantial or grammatical modifications. The Board may also adopt the proposed regulatory language with other modifications if the text as modified is sufficiently related to the originally proposed text that the public was adequately placed on notice that the regulatory language as modified could result from the proposed regulatory action; in such event

the full regulatory text, with the modifications clearly indicated, will be made available to the public, for written comment, at least 15 days before it is adopted. The public may request a copy of the modified regulatory text from the Board's Public Information office, 2020 L Street, Sacramento, California 95814, (916) 322-2990.

CALIFORNIA AIR RESOURCES BOARD

Michael P. Kenny
Executive Officer

Date: